APPENDIX 1. SEARCH STRATEGIES FOR SYSTEMATIC REVIEWS

OVID MEDLINE

1	(meta-analy$ or metaanaly$ or meta analy$).tw. or exp Meta-Analysis/ or (systematic adj (review$ or overview$)).tw. or (systematic review or literature review or rapid review or umbrella review or meta synthesis or metasynthesis or meta-analysis or meta-synthesis or integrative review or data synthesis or comparative effectiveness review).mp.
2	(case report or case series or letter or comment or editorial).tw.
3	1 not 2
4	Exp Case Management/ or ((care or case) adj1 management).ti,ab.
5	Exp transitional care/
6	(home based primary care).ti,ab. or (home based primary care).kw. or (home based primary care).sh
7	(intensive primary care).ti,ab. or (intensive primary care).kw. or (intensive primary care).sh.
8	((integrat* or collaborat* or coordinat* or transition* or interdisciplin*) adj1 care).ti,ab.
9	or/4-8
10	3 and 9
11	Limit 9 to English
12	Limit 11 to yr="2015-current"

OVID EMBASE

1	(meta-analy$ or metaanaly$ or meta analy$).tw. or exp Meta-Analysis/ or (systematic adj (review$ or overview$)).tw. or (systematic review or literature review or rapid review or umbrella review or meta synthesis or metasynthesis or meta-analysis or meta-synthesis or integrative review or data synthesis or comparative effectiveness review).mp.
2	(case report or case series or letter or comment or editorial).tw.
3	1 not 2
4	Exp Case Management/ or ((care or case) adj1 management).ti,ab.
5	Exp transitional care/
6	(home based primary care).ti,ab. or (home based primary care).kw. or (home based primary care).sh
7	(intensive primary care).ti,ab. or (intensive primary care).kw. or (intensive primary care).sh.
8	((integrat* or collaborat* or coordinat* or transition* or interdisciplin*) adj1 care).ti,ab.
9	or/4-8
10	3 and 9
11	Limit 9 to English
12	Limit 11 to yr="2015-current"
13	Limit 12 to conference abstract status
14	12 not 13

CINAHL

1	(TI (systematic* n3 review*)) or (AB (systematic* n3 review*)) or (TI (systematic* n3 literature)) or (AB (systematic* n3 literature)) or (TI (integrative n3 review)) or (AB (integrative n3 review)) or (TI (information n2 synthesis)) or (TI (data n2 synthesis)) or (AB (information n2 synthesis)) or (AB (data n2 synthesis)) or (TI (meta-analy* or metaanaly*)) or (AB (meta-analy* or metaanaly*)) or (TI (umbrella* n2 review*)) or (AB (umbrella* n2 review*)) or (TI (rapid* review*)) or (AB (rapid* review*)) or (TI (compar* effect* review)) or (AB (compar* effect* review))
2	(TI (care or case) n2 management) or (AB (care or case) n2 management)
3	(TI (transitional care)) or (AB (transitional care))
4	(TI (home based primary care)) or (AB (home based primary care))
5	(TI (intens* primary care)) or (AB (intens* primary care))
6	(TI ((integrat* or collaborat* or coordinat* or transition* or interdisciplin*) n2 care)) or (AB ((integrat* or collaborat* or coordinat* or transition* or interdisciplin*) n2 care))
7	MH transitional care

8	MH case management
9	S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8
10	S1 AND S9 (Limiters: Research article, peer reviewed, published 2015 and later, human, English language)

COCHRANE REPORTS

1	("case management"):ti,ab,kw OR ("care management"):ti,ab,kw OR ("intensive primary care"):ti,ab,kw OR (transition* next care):ti,ab,kw OR ("home based primary care"):ti,ab,kw OR (integrat* next care):ti,ab,kw OR (collaborat* next care):ti,ab,kw OR (coordinat* next care):ti,ab,kw OR (transition* next care):ti,ab,kw OR (interdisciplin* next care):ti,ab,kw
2	with Cochrane Library publication date from Jan 2015 to Oct 2019, in Cochrane Reviews

AHRQ REPORTS

1	Keyword search for: Care coordination, case management, care management, collaborative care, integrative care, transitional care, home-based primary care, intensive primary care
2	Limited to 2015 and later

VA ESP REPORTS

1	Title search for: Care, case, coordin*, manage*, collab*, integrat*, transit*, home-based*, intens*, interd*
2	Limited to 2015 and later

APPENDIX 2. SEARCH STRATEGIES FOR PRIMARY STUDIES

OVID MEDLINE AND EMBASE

1	Exp Case Management/ or ((care or case) adj1 management).ti,ab.
2	Exp transitional care/
3	(home based primary care).ti,ab. or (home based primary care).kw. or (home based primary care).sh
4	(intensive primary care).ti,ab. or (intensive primary care).kw. or (intensive primary care).sh.
5	((integrat* or collaborat* or coordinat* or transition* or interdisciplin*) adj1 care).ti,ab.
6	("delivery of health care, integrated" or "care continuity" or "continuum of care").ti,ab.
7	or/1-6
8	Randomized Controlled Trials as Topic/
9	randomized controlled trial.ti,ab,sh,kw,pt.
10	random allocation.ti,ab.
11	Double-Blind Method/
12	Single-Blind Method/
13	clinical trial/
14	clinical trial, phase i.pt.
15	clinical trial, phase ii.pt.
16	clinical trial, phase iii.pt.
17	clinical trial, phase iv.pt.
18	controlled clinical trial.pt.
19	clinical trial.pt.
20	exp Clinical trials as topic/
21	(clinical adj trial$).tw.
22	((singl$ or doubl$ or treb$ or tripl$) adj (blind$3 or mask$3)).tw.
23	randomly allocated.tw.
24	(allocated adj2 random$).tw.
25	or/8-24
26	7 and 25
27	Limit 26 to English
28	Limit 27 to yr=”2018-current”
29	Remove duplicates from 28

CINAHL

1	TI "care management" or TI "case management" OR AB "care management" or AB "case management"
2	TI "transition* care" OR AB "transition* care"
3	TI "home based primary care" OR AB "home based primary care"
4	TI "intensive primary care" OR AB "intensive primary care"
5	TI "integrat* care" OR AB "integrat* care"
6	TI "care continuity" OR AB "care continuity"
7	TI "continuum of care" OR AB "continuum of care"
8	TI "collaborat* care" OR AB "collaborat* care"
9	TI "coordinat* care" OR AB "coordinat* care"
10	TI "care coordinat*" OR AB "care coordinat*"
11	TI "interdisciplin* care" OR AB "interdisciplin* care"
12	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11
13	TI (randomized controlled trial or randomised controlled trial) OR AB (randomized controlled trial or randomised controlled trial)
14	TI "random* allocat*" OR AB "random* allocat*"
15	S13 OR S14
16	S15 AND S12 (Limits applied: Peer reviewed; published 2018-current; English language; exclude MEDLINE records)

APPENDIX 3. STUDY SELECTION CRITERIA

	Inclusion Criteria	Exclusion Criteria
Population	Community-dwelling adults with a variety of ambulatory care sensitive conditions and/or at higher risk of having repeat hospitalization of emergency department [ED] visits	Restricted to single condition (*eg*, heart failure) or single combination (*eg*, diabetes and depression)
Intervention	Care coordination models: • Care or case management • Transitional care (if involving patient contact ≥ 1 month after discharge) • Home-based primary care • Intensive primary care • Integrated or interdisciplinary care • Collaborative care model	Hospice and end-of-life care (if exclusive focus of intervention)
Comparator	Any (active or inactive)	
Outcomes	• Primary—Hospitalization, ED visits • Secondary—Patient experience; tools and approaches	
Timing	Any duration	
Setting	Community-base, outpatient	
Study Design	• For KQ 1 & 2: Systematic review (SR) or Patient Level Meta-Analysis—must have search strategy, eligibility criteria, and analysis/synthesis plan; may include RCTs, observational studies, and/or qualitative studies • For KQ 3&4: RCTs or quasi-experimental studies (*eg*, cohorts with comparative controls)	Expert or narrative reviews
Other	English Language	

APPENDIX 4. QUALITY ASSESSMENT

4.1 QUALITY ASSESSMENT CRITERIA FOR SYSTEMATIC REVIEWS (MODIFIED AMSTAR 2)[14]

6. **Did the research questions and inclusion criteria for the review include the components of PICO?**

   Must have **p**opulation, **i**ntervention, **c**omparator group and **o**utcome.

   Yes | No

7. **Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify and signification deviations from the protocol?**

   Partial Yes=ALL of the following: review questions, search strategy, inclusion/exclusion criteria, risk of bias assessment

   Yes=ALL of partial yes plus: protocol registered, a meta-analysis/synthesis plan (if appropriate) and a plan for investigating causes of heterogeneity, justification for any deviations from the protocol

   Yes | Partial Yes | No

8. **Did the review authors explain their selection of the study designs for inclusion in the review?**

   Example: explanation for including RCTs only

   Yes | No

9. **Did the review authors use a comprehensive literature search strategy?**

   Partial Yes: must have searched at least 2 databases (relevant to research question), provided key word and/or search strategy, justified publication restrictions (eg, dates)

   Yes=ALL of the above plus searched reference lists/bibliographies, searched trial/study registries, included/consulted content experts i nthe field, searched for grey literature where relevant, conducted search within 24 months of completion of the reivew

   Yes | Partial Yes | No

10. **Did the review authors perform study selection in duplicate?**

    (at least two reviewers independently agreed on selection of eligible studies and achieved consensus on which studies to include)

    Yes | No

11. **Did the review authors perform data extraction in duplicate?**

(at least two reviewers achieved consensus on which data to extract)

Yes | No

12. **Did the review authors use a satisfactory technique for assessing the quality of individual studies that were included in the review?**

Partial Yes: must have described element of quality

Yes: must have also used standard quality or risk of bias tools

Yes | Partial Yes | No

13. **If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results?**

(the authors justified combining the data in a mete-analysis and considered heterogeneity)

Yes | No | No meta-analysis conducted

14. **If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?**

(performed graphical or statistical tests for publication bias and discussed the likelihood and magnitude of impact of publication bias)

Yes | No | No meta-analysis conducted

15. **Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?**

(the authors reported no competing interests OR they described their funding sources and how they managed potential conflicts of interest)

Yes | No

16. **Taking into account your previous answers, please rate quality as:**

High | Medium | Low

4.2. QUALITY ASSESSMENT FOR ALL ELIGIBLE SYSTEMATIC REVIEWS

Author, Year	Research Questions include components of PICO?	Protocol established prior to conduct of review?	Explained selection of included study designs?	Comprehensive search strategy used?	Dual review for inclusion? Dual review for data extraction?	Assessed quality?	Meta analyses: Appropriate statistical methods and investigation of publication bias?	Reported any potential conflicts of interest?	Overall Quality
Baker, 2018[15]	Yes	Partial Yes	No	Partial Yes	Yes	Yes	NA	Yes	Medium
Bleich, 2015[16]	Yes	Partial Yes	Yes	No	Yes	No	NA	Yes	Low
De Pourcq, 2017[17]	No	No	Yes	Yes	Yes	Partial Yes	NA	Yes	Low
Di Mauro, 2018[18]	Yes	Partial Yes	No	Partial Yes	Yes	Yes	NA	Yes	Medium
Edwards, 2017[29]	Yes	Partial Yes	No	Yes	Yes	Yes	NA	Yes	Medium
Hudon, 2019[19]	Yes	Yes	Yes	Yes	Yes	Yes	NA	Yes	High
Iovan, 2019[20]	Yes	Partial Yes	No	Yes	Yes No	No	NA	Yes	Medium
Joo, 2017[21]	Yes	Partial Yes	No	Partial Yes	Yes	Yes	NA	Yes	Medium
Le Berre, 2017[22]	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	High
Moe, 2017[23]	Yes	Yes	Yes	Yes	Yes	Yes	NA	Yes	High
Raven, 2016[24]	Yes	Yes	No	Yes	No	Partial Yes	NA	Yes	Low
Smith, 2016[25]	Yes	Yes	Yes	Yes	Yes	Yes	NA	Yes	High
Soril, 2015[26]	Yes	Partial Yes	No	Yes	Yes	Yes	NA	Yes	High
Totten, 2016[30]	Yes	Yes	Yes	Yes	Yes	Yes	NA	Yes	High
Van der Elst, 2018[27]	Yes	Yes	No	Partial Yes	No Yes	Yes	Yes	Yes	Medium
Weeks, 2018[28]	Yes	No	Yes	Yes	No	Yes	No	Yes	Low

APPENDIX 5. KEY INFORMANT INTERVIEW GUIDE

A. INTERVENTION INFORMATION GAPS

1. Thank you. In this first part of the interview we'd like to get your perspective on and experience with *[name of intervention],* as well as ask some specific questions about your project.

2. So to start, we have read your article in *[journal],* **but could you please briefly tell us about your experience with this project?**

3. Now I have some specific questions on your study. As a quick reminder, your responses to these might be connected to your study in the report.

    a. *If unclear in published studies*—Who was the team lead for care coordination? (eg, nurse, social worker, etc.)

    b. Was there collaboration between clinical teams in primary care and specialty care? If so, please describe.

        - Were tools or surveys used to assess team integration?

    c. Were there specific tools or approaches used to improve communication between patients and providers?

        - Were tools or surveys used to assess quality of communication between patients and providers?

    d. Were tools or surveys used to assess patient trust or working alliance?

    e. How were community groups involved?

    PROBE:

    - *Community service groups to assist older adults, community advocacy groups for uninsured*

B. UPTAKE AND SUSTAINABILITY

Now we'd like to ask some questions regarding the uptake and sustainability of your intervention. The responses on these questions will be kept private and reported only in summary (as in major themes).

1. Aside from team members, **who were some of the stakeholders that influenced the planning, uptake and sustainability of your intervention?**

    a. What role did these stakeholders play?

    b. How did you engage these stakeholders in discussions to determine which outcomes were important?

PROBE:
- *Local leadership, frontline staff, providers, patients, other important groups or individuals?*

2. Is this intervention still in place at your facility/institution?

If YES

a. What has the long-term impact been?

PROBE:
- *Could you elaborate more on the long-term provider and patient satisfaction?*
- *Is there ongoing (or future) evaluation planned?*

IF NO

b. Why not?

C. OVERALL EXPERIENCE/REFLECTION ON INTERVENTION

1. To wrap up, we just have 2 final questions about your overall experience with this intervention.

2. First, what about your intervention seemed to work well?

3. Lastly, what about your intervention would you do differently next time?

D. IS THERE ANYTHING ELSE YOU'D LIKE TO ADD THAT I DIDN'T ASK ABOUT?

APPENDIX 6. PEER REVIEW COMMENTS/AUTHOR RESPONSES

Reviewer Comments	Response and Revisions
Reviewer 1	
Are there any published or unpublished studies that we may have overlooked? *Hynes, DM, Fischer, M, Fitzgibbon, M, Porter, AC, Berbaum, M, Schiffer, L, Chukwudozie, IB, Nguyen, H, Arruda, J. Integrating a Medical Home in an Outpatient Dialysis Setting: Effects on Health-Related Quality of Life. J Gen Int Med. 2019; 34(10): 2130-2140. doi: 10.1007/s11606-019-05154-9. PMID: 31342329.* *Hynes DM, Fischer MJ, Schiffer LA, Gallardo R, Chukwudozie IB, Porter A, Berbaum M, Earheart J, Fitzgibbon ML. Evaluating a novel health system intervention for chronic kidney disease care using the RE-AIM framework: Insights after 2 years. Contemp Clin Trials. 2016 Oct 18;52:20-26. DOI: 10.1016/j.cct.2016.10.003. [Epub ahead of print] PubMed PMID: 27769897.*	Thank you for these suggestions. We reviewed these studies and have not included them because they are not systematic reviews. They also do not meet our criteria for relevant primary studies (eg, focused on a range of ambulatory care sensitive conditions).
[Page 1, line 53] Can you elaborate more on the scope—did your inquiry include PCMH, PACT, and variations of these models or was the definition of care coordination more narrow? One of our struggles in this space is definitions, so the more clear you are in explaining your inclusion and exclusion criteria, the more helpful this review will be	We agree with reviewer that describing and defining different care coordination models remains a challenge in interpreting results from these interventions. Our scope was very broad, and eligible systematic reviews included many types of care coordination interventions. We relied on review authors definitions and categorization of interventions, and provide this more detailed information for high and medium quality reviews in Appendix Table 7.
[Page 2, line 25] Please define what is meant by "primary studies"	Primary studies are research studies included by eligible reviews, or found through our updated search for RCTs. Primary studies are not reviews, whether systematic or narrative.
[Page 4, lines 14-16] Did any mention any care management or communication tools used? software? processes? work flow? These process aspects are critical to care coordination and case management being successful	We agree that these are important characteristics of care coordination interventions, and we abstracted information from eligible systematic reviews, when available. However, no systematic review provided this level of detailed information in distinguishing between effective and non-effective interventions (KQ 1).
[Page 6, line 28, line 39] which reviews? Please cite. Need to know which frameworks you are referring to...implementation or theoretical frameworks? And which ones within these categories?	Citations are provided in the main body of the report, and are not included in the Executive Summary. There are a variety of implementation frameworks which may be applied, and we have added specific examples to the Discussion section.
[Page 7, lines 10-19] I would suggest having the recommendation on implementation to be last. I suggest this because I think of the basic science needed first that needs to inform an implementation. The other 3	We appreciate reviewer's suggestion. We believe that application of implementation frameworks helps in conceptualizing core vs peripheral components or characteristics.

Reviewer Comments	Response and Revisions
bullets are more foundation research needed prior to implementation studies, in my opinion.	Therefore, we have reordered the recommendation such that implementation frameworks are next to last.
[Page 10, lines 50-51 and Page 13, lines 21-23] Did look for those at a patient level or at a system level. I would be very disappointed if this review excluded studies that examined patient level healthcare use... Please clarify if studies that focused on health care use at an individual level was included or limited to studies that reported only health system level healthcare use?	As indicated in Table 3, outcomes such as hospitalization and ED visits were assessed in a variety of ways, including the proportion of patients who had any hospitalization and the average number of admissions or ED visits per person over a set period of time. In classifying these outcomes as system-level in our adaptation of the Care Coordination Framework, we intended to indicate that utilization outcomes are more from the perspective of health systems (and payers), as compared with patient-centered outcomes, including patient experience. We have clarified this point in the Methods.
[Page 17, lines 35-36] Why was review limited to these outcomes? Were any patient reported outcomes considered? These K2-K4 were to be focused on other outcomes	As defined with our VA stakeholders and TEP, the main focus of this report was on care coordination models that had an impact on hospitalization and/or ED visits. When eligible systematic reviews (and primary research studies) provided information on patient experience, we also abstracted that information. However, few reviews or primary studies included results on patient experience. KQ 3 and 4 address settings and tools used by effective interventions, and do not define additional intervention outcomes.
[Table 3] I am getting confused about which KQ's are being addressed	In Table 3, we provide detailed information from research studies reporting effective care coordination models. The main goal of identifying and examining primary research studies was to address KQ 3 and 4, but no studies provided information on KQ 4. Therefore, relevant information in Table 3 mainly addresses KQ 3. We also provide descriptive information on the intervention, and main outcomes reported in these studies (KQ 2), in order to put results for KQ3 in context. We have clarified the Results.
Reviewer 2	
Thank you for the opportunity to review this evidence synthesis on this important and timely topic. I think that the work presented has several strengths that, in the interest of brevity, I will not elaborate on. However, I am both confused and concerned that, somehow, an evidence synthesis entitled and aimed at synthesizing “Care Coordination Models” ended up being almost entirely about “Case Management Models.” I appreciate that case management models were likely of most interest to the operational partner, which makes this work very useful to them, but what I can not discern is if this focus on case management models happened because of decisions made for the synthesis (i.e., there was an intentional decision to focus on case management models) or if the search strategy only yielded these case management models (and a couple on intensive	Our scope was very broad and we included a range of interventions. We relied on review authors categorization of different interventions, and as shown in Appendix Table 7, review authors often defined case or care management as collaborative and/or interdisciplinary. Thus, case or care management is itself a broad term that may include collaborative teams. Additionally, we also identified 2 reviews that were focused on different intensive primary care models. We did not exclude any systematic review based on our quality assessment, but notably, all low-quality eligible reviews also addressed case management and/or transitional care. The effective interventions described in primary research studies also varied, including case management led by a single nurse or social worker, variable involvement of primary care providers, and outpatient group visits. We have reorganized Table 3 and edited text in Results to highlight the variability in care coordination models included in this report.

Reviewer Comments	Response and Revisions
primary care). If this is a result of decisions made to meet the needs of the partner, then this needs to be more clearly explained, and consider changing the title to a synthesis of case management models. If the search strategy was designed to capture the breadth of care coordination models (which is what it seems is the case, both from the text and from Appendix 1, which included “collaborat” and “interdisciplin”), I am left wondering what happened to the reviews of other models (why did they not get included)? Did your search terms garner any reviews on other care coordination models (e.g., collaborative/ team-based care models)? If not, why not? If the search did garner reviews, at what point did they get dropped in the exclusion criteria (were they not high quality enough reviews)? I think explicit description of how such models did not get included is warranted, and then discussing the implications. For example, if they are not included because there are no high quality reviews of these models, what does that tell us about the state of the literature in this area?	
Reviewer 3	
Overall, amazing job making sense of a great deal of information! The ESP team, with support from the TEP members, designed and conducted a thorough and rigorous review of evidence on care coordination interventions to inform the VA CC&ICM initiative. My comments and suggestions are offered in the spirit of improvement and listed in order of appearance in the draft manuscript. Executive summary: 1. My understanding of the CC&ICM initiative is that it is a multilevel intervention designed to deliver care coordination support at a level appropriate to the care needs of Veterans. Given that the innovation of this program is its stratification of Veterans and services by need, I expected this ESP evidence review to distinguish programs by level of service. Was there no element of this in the review? 2. Was there any effort to speak with patients receiving these interventions? Before the VA takes up recommendations based on these programs, I think someone needs to hear directly from patients about their experience. If patient perspectives were not included in this review, you should say so in the limitations section.	Thank you. In abstracting results from eligible systematic reviews, we looked for any description of stratification and matching different levels of care coordination services. However, this was not reported in the reviews, most likely because the underlying primary research studies did not describe such a strategy. In the primary research studies that we examined, we also did not see a multi-level stratification and systematic matching of services. Instead, studies most often used risk factors as eligibility criteria, and implemented the intervention for patients who met these criteria. As this is an evidence synthesis report, we focused on existing published studies to address KQ. If reported in eligible systematic reviews and relevant primary studies, results on patient experiences of care were abstracted. Because we anticipated that information for KQ 3 and 4 may not be included in papers, we took the additional step of seeking interviews with investigators and other team members who implemented care coordination models. Collecting primary data from patients regarding their experiences of care would be beyond the scope of this report (and not expected for evidence synthesis projects).

Reviewer Comments	Response and Revisions
3. In defining effectiveness, I suggest you describe both sufficient and necessary conditions. Specifically, though not a sufficient condition, I think it's important that the reviews considered patient experience as part of its definition of effectiveness.	We agree with reviewer that patient experiences of care is an important consideration in evaluating care coordination models. However, in consultation with our VA stakeholders and TEP, hospitalizations and ED visits were selected as the primary outcomes of interest; they defined whether a care coordination intervention would be considered effective. Our interviews with investigators and staff who implemented care coordination models also substantiated these decisions, as the sustainability and spread of these interventions were affected by whether they were able to change acute care utilization. We have clarified these choices in Methods and added to limitations in Discussion
4. The methods prioritize studies of interventions that demonstrate effectiveness. However, the most valuable learning from the review of prior interventions for the VA may come from the quality of descriptive information about how, why, and under what conditions an intervention was or was not effective. Did or could the review identify studies that were rich in information about mechanisms or theory of change? In producing this ESP evidence review, did the authors seek to summarize this type of information?	We agree that understanding the exact situation or context when an intervention is effective (or not) is an important goal. As note in Results, multiple eligible reviews sought to answer such questions, but they were unable to draw conclusions. The heterogeneity of intervention components, along with variation in populations and settings, has continued to present challenges in summarizing and interpreting the evidence on care coordination models. In our examination of the relevant primary research studies, we similarly could not draw clear conclusions on whether variation in specific intervention components, population characteristics, and/or types of settings were key in determining the effectiveness. We agree that qualitative methods are important for the evaluation of these interventions, and they are often employed in implementation studies. We limited our search for additional information on assessment of patient relationships with the care team to those studies that were cited in the original articles identified from eligible reviews (and from the search for RCTs). We also examined any materials referred to us during interviews. However, if there were subsequent qualitative evaluations of interventions that were not cited in the original articles and we were unable to conduct an interview with the team, then we would have identified these.
5. On page 4 of the report, line 29, I am disappointed to see that only 1 study used qualitative methods. Could that be accurate? If so, I hope that 1 of the recommendations is that there is a qualitative assessment of the CC&ICM.	As noted above, eligible systematic reviews and relevant primary research studies did not provide results on systematic stratification of patients and matching of needs.
6. The results don't seem to differentiate programs according to the level of health needs of the patient populations served. I think the CC&ICM would benefit from understanding results stratified by levels of need similar to the levels in the VA initiative.	Thank you. We have added to the Discussion the suggestion regarding the importance of evaluating adaptations and education on program goals.
7. On page 6 of the report, line 18, the authors conclude that some local adaptations to the CC&ICM may be helpful for supporting uptake and	

Reviewer Comments	Response and Revisions
sustainability of CC&ICM. I couldn't agree more, particularly because the populations served are likely to vary. The VA should make an effort to document supportive adaptations and the circumstances in which they apply, because while they may not apply everywhere, they are likely to apply somewhere. Also, in addition to the concept of core versus adaptive periphery, I think the findings suggest that the CC&ICM should consider the conditions under which adaptation is appropriate. Further, the findings suggest that in rolling out the CC&ICM intervention, education must focus on communicating the intent of the intervention, in addition to the recommended approach, to increase the likelihood that adaptations will be supportive.	
8. On page 7 of the report, line 16, the authors conclude that future evaluations should use randomized designs. I respectfully disagree. Given the importance of implementation to the effectiveness of any intervention like CC&ICM, I don't believe that a study designed to tell you whether an intervention that is implemented across a wide variety of settings and participants works is particularly informative. More helpful will be studies that describe where, why, and how they work when they do succeed.	We agree with reviewer that understanding where, why, and how are important aspects of future work. However, we do not believe that this precludes the use of randomized designs, especially when quantitative patient-level outcomes are featured. Additionally, the use of randomization can address important threats to the internal validity of research studies. For example, the recent RCT of healthcare hotspotting (Finkelstein et al. NEJM 2020; 382:152-162) showed that this intervention was not effective, in contrast to previous observational studies that suggested positive impacts. Mixed-methods designs that combine rigorous quantitative and qualitative techniques will likely be the most helpful in the future.
Additional comments on the evidence report: 9. Can you provide additional information about why the expert panel felt that the Care Coordination in Chronic and Complex Disease Management framework was the most applicable to the goals of this current review and how the group of existing resources were identified? Also, did you use this framework for anything other than to effective care coordination? To do that, I would think it most appropriate to look across coordination/integration frameworks to understand which outcomes are considered most relevant.	In the Methods, we have clarified the rationale for selecting this framework, and how it informed the overall methodology of this report.
10. KQ3 and KQ4 are potentially the most important. However, I don't see much written about the answers to these questions in the executive summary. (Note, I see later that the interviews are designed to get at these questions. I hope when the analysis of transcripts is complete, there will be more to say.) While Table 3 describes settings in which interventions were implemented, what would be most helpful is understanding which interventions were implemented in which settings and whether there were any systematic differences in intervention by setting.	We have included more information from the completed interviews in Results. In examining the primary research studies for characteristics of settings for effective (and non-effective) care coordination models, we found great variation and no discernable systematic differences.

Reviewer Comments	Response and Revisions
11. The most informative data may be in Table 3, the description of patient contacts, as this column describes the dose of the intervention. Could the team group the interventions targeting patients at different levels of need and then compare the intervention dosages applied. Most useful might be understanding the range of patient contacts attempted for a given level of need. Also, I presume these descriptions apply to the intervention as designed. If any information is available about fidelity to the intervention (I realize this is unlikely), this would make assessing the impact of these interventions more useful.	Aside from most studies including older adults, it was difficult to find commonalities that allowed us to clearly distinguish studies based on patient populations. We have reorganized Table 3 to indicate those interventions targeting those who were recently hospitalized (or discharged from ED). But there has been a range of patient contacts for this group of studies, as well as for those enrolling outpatients in general.
Reviewer 4	
This is a well-done report focused on meeting an operational partner's specific needs. As such, it does not answer all potentially relevant questions to care coordination in the VA, but rather those that the partner had an interest in. There are just a few minor items that came to my attention while reading the draft. All comments I make below apply equally to the executive summary and the main report, but I will use pages and line numbers from the main report.	Thank you.
Page 10, lines 50-51. There is a disconnect between what is written here and the actual wording of KQ2 on the next page, which specifically mentions patient experience as if it had equal importance to hospitalizations/ED visits. Should patient experience be mentioned here, since it is in Table 1 as a patient outcome?	We appreciate reviewer suggestions, and as noted above, have clarified in Methods how we applied the care coordination framework (depicted in Table 1) to define scope and KQ.
Page 13, lines 21-23. Related to the comment above: it appears that the review was delimited to only those reviews covering at least hospitalizations and/or ED visits as outcomes of interest. From this, it seems that patient experience is not on the same footing of importance as hospitalizations and ED visits, but that contradicts the wording of KQ2, which places them on an even footing. This probably relates to partner prioritization as mentioned earlier in the report, but further clarification would be helpful. I suspect that there might be some systematic reviews in the literature that only focus on patient experience and not on hospitalizations/ED visits, and those would have been missed by delimiting the search to requiring mention of hospitalizations and/or ED visits as an outcome of interest.	We have clarified the decisions in determining effective interventions in Methods and added the limitation regarding evidence on patient experience to the Discussion.

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Page 17, lines 44-47. I am not surprised that little was found on specific tools/measures in the published literature. Such things might show up in the grey literature or on the Web. Hopefully the rest of the key informant interviews will help, but it may be a limitation of the search strategy used that grey literature/websites were not searched (understandably given time constraints).	We identified websites associated with primary research studies of care coordination models, if these were cited by the studies or linked with the investigators (via searches online). We examined information provided on these websites and have included relevant information in the Results section on interviews. We have clarified this additional source of information in Methods
Page 25, lines 38. "Goals and needs" are mentioned but I can't tell whose goals and needs are being referred to.	We have clarified this sentence in the Discussion.
Page 27, lines 18-20. Is there actual data to support this final sentence? How do we know that redesigning primary and specialty care teams to improve continuity and collaboration would be more effective than the approaches used by the studies reviewed? I'm concerned about extrapolating beyond the scope of the review.	In the Discussion, we noted several examples of health care redesign that went beyond adding on of care coordination services. We agree that evidence on whether they are superior to care coordination is lacking. Therefore, we have edited this sentence to indicate such redesign efforts may be considered an option.
Reviewer 5	
No - Clarity of Objectives. It was difficult to find a paragraph or section where the study objectives were clearly and succinctly introduced. It appears objectives were stated on page 9, lines 35-45.	We clarified the goals presented in the Introduction. Additionally, KQ are described in Methods.
The use of a header, along with clearer wording of objectives, would aid in clarification of objectives.	We are unsure which headers were confusing for the reviewer. In the Methods, we used standard headers and sections for ESP reports. We also reviewed sections in the Results and separated out relevant results per KQ.
Conceptual Framework. The conceptual framework (page 10, Table 1), while detailed, is not clearly linked to the key questions. Without these linkages, the scope of the synthesis is confusing. Some considerations for improving these linkages are as follows: • When considering KQ1, “What are the key characteristics of care coordination models that aim to reduce hospitalizations and ED visits?”: o Which, if any, of the categories shown in Table 1 represent key characteristics? o Page 16, lines 29-42 mentions an intervention component “multidisciplinary care plan” where would this fit in the conceptual framework? • When considering KQ3, “What are the characteristics of settings in which effective models have been implemented?”: o Which, if any, of the categories shown in Table 1 represent “characteristics of settings”?	As noted above, we have clarified in the Methods how we applied the Care Coordination Framework to the methodology for this report. We agree with reviewer that characteristics of interventions (and of settings) are broadly defined, and could come from multiple columns listed in Table 1. We relied on authors of eligible systematic reviews to define what they considered to be key characteristics. Similarly, we sought to abstract any review results on characteristics of where interventions were implemented. We have also clarified the application of the Framework to KQ. KQ4 addresses in part the column on Emergent Integrating Conditions, in seeking evidence on tools to assess team integration. The results shown in Table 3 are those reported by primary studies. To guide development of the methodology for this evidence review, the framework was selected before we had identified (or examined) all eligible reviews or relevant studies. It is best practice to define the protocol for the systematic review before seeing the results.

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o Why are the elements reported in Table 3 (and on page 17 lines 43-45) rural community hospitals, academic medical centers not accounted for in the model? • Do the categories “Emergent Integrating Conditions” and “Coordinating Actions” relate to any of the key questions? If not, perhaps those columns of Table 1 could be shaded and a note indicating that the scope of this study does not include these elements. In sum, mapping the key questions to the conceptual framework will clarify the scope of the synthesis. In addition, the text should provide a bit more detail for the reader as to how the key questions relate to the conceptual framework. Operational Definitions. The document could be strengthened by including operational definitions for the following terms: “key characteristics of care coordination models”; and “characteristics of settings”.	As noted above, we abstracted what eligible systematic reviews defined as key characteristics of interventions. For setting characteristics, we also abstracted a range of information about the health care system and the community. We have added some potential examples to the Methods.
Is there any indication of bias in our synthesis of the evidence? Yes - Care coordination interventions are inherently complex and this evidence synthesis was very ambitious. The methodologic decisions to study a range of ambulatory care sensitive conditions and to study different care coordination models, likely increased the heterogeneity and complexity of this synthesis to a level where the noise was stronger than the signal. Perhaps narrowing the selection criteria to arrive at a more homogeneous sample of papers was not an option. Nonetheless, I’d like to see the authors address this limitation and possible source of bias in the final paper. In addition, I’d like them to offer ideas for some alterative choices in the search strategy that could lead to more homogeneous samples in the future that may advance our understanding of care coordination interventions.	We determined the search strategy and inclusion/exclusion criteria to optimize identification of the most relevant evidence to address the priorities and needs of our VA stakeholders. As the CC&ICM initiative is meant to streamline care coordination programs throughout VA facilities nationally, we sought evidence on models that could be widely implemented (and locally adapted, whenever possible). We do not believe that these decisions introduced bias into identification or interpretation of the evidence. If the evidence review was meant to address a different goal for either a more limited patient population (eg, how to improve outcomes for heart failure patients with comorbidities), or a specific definition of care coordination (eg, nurse-led intervention), then the search strategy could be tailored to those needs.
The findings of this literature synthesis underscore that the science behind care coordination is in its infancy. In hindsight, this review may have benefitted from the inclusion of published QI studies. This particularly true with respect to KQ1 the key components of interventions which are generally more thoroughly described in the QI literature.	We did not exclude systematic reviews based on the types of studies they included. Additionally, there is not a specific study design that is shared by all QI studies. For relevant primary studies, we required that these be RCT or quasi-experimental (eg, observational study with comparative cohort). QI studies could employ these various designs, and there are current efforts to include randomization in QI work [Horwitz et al. NEJM 2019; 381:1175-1179].
Reviewer 6	
This is a rigorous evaluation of a complicated topic: care coordination models and tools. The challenge with a synthesis effort like this 1 is that the existing models are heterogeneous in the populations they focus on,	Thank you.

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structure, processes, goals, and outcomes. As such, most of the models develop their own care coordination tools and procedures, and there is likely variation in the degree to which their approaches are grounded in evidence vs reflective of home-grown practical clinical tools. The evidence synthesis reflects this challenge. Investigators found that existing evidence suggests that care coordination models have inconsistent effects on reducing hospitalizations and/or ED visits and unfortunately there have been few clear-cut lessons about how to move this field forward. Overall, the evidence synthesis appears rigorous and comprehensive, but the findings are a bit disappointing in that they do not reveal many practical strategies or lessons for the VA and others to adopt, and their literature review and interviews did not identify any specific tools. Specific suggestions:	
Pg 8/lines 50-52 (and Appendix 3): Add detail/clarification about inclusion criteria for patient populations. Did papers have to focus on patients with ACSCs in order to be eligible? What about papers focused on patients with mental health conditions or cancer (given the prevalence of these conditions among Veterans requiring care coordination)? Based on the final list of included papers, it looks like the review covers a wider range of patient populations/conditions than the inclusion criteria suggest.	We have clarified in Methods the inclusion and exclusion criteria for eligible systematic reviews. Reviews needed to include a range of conditions and/or a more general definition of higher-risk patients. Reviews that included studies which addressed patients with mental health conditions or cancer would have been included, if the reviews did not exclusively focus on a single or narrow set of conditions.
Pg 11/line 22 (and elsewhere): clarify the term “observational study”- it looks like these studies needed to have a control group in order to be included?	We have added some examples of what constituted quasi-experimental observational studies. The relevant primary studies included by reviews were either observational or RCT, and we required that observational studies used some form of quasi-experimental designs. Although there are a variety of potential designs, the selected studies all used comparative control cohorts.
Pg 11/line 34: I know interviews are still ongoing, but the purpose and value of these is unclear. The results don’t seem to address the main goal outlined on Pg 9 (addressing gaps regarding tools and approaches to assessing patient trust, team integration, and patient-provider communication). I am also surprised that these interviews did not reveal any tools, if you were able to contact individuals involved in the care coordination interventions/evaluations. Pg 12/line 14: what is a high-intensity model?	We have clarified the goals of the key informant interviews in Methods. We note that we were able to conduct interviews with ~50% of those whom we invited. It is possible that those who were not interviewed would have provided more information on tools and approaches. Among those we interviewed, and based on published studies, it appears that formal assessment of these areas was not often incorporated into the evaluation of care coordination interventions. In the Executive Summary and Discussion, we have added more information about how review authors defined this term.

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Pg 12/line 23-25: I am a little puzzled by the focus on tools/approaches that assess patient trust or working alliance and health care team integration. While these topics are important for care coordination, it seems like there are a lot of other practical tools for care coordination that would be valuable to review and share (e.g., assessing patient needs for care coordination, assessing patient goals and priorities, understanding social circumstances that are influence health and health care engagement, identifying modifiable risk factors for hospitalization/ED visits). It might not be possible to comment on these at this stage, but at the very least would justify the reason for focusing on the tools highlighted in the report.	In the Methods, we have clarified the rationale for selecting these tools. These were topics that were particularly relevant to our VA stakeholders, whereas other tools (eg, for assessing patient needs) were not as salient given the current status of the CC&ICM initiative. For example, the initiative had already begun testing standardized assessments of patient needs and risk factors, and they were seeking evidence on how to evaluate (or further improve) various care coordination services.
Pg 13/line 23-34: Here or elsewhere, consider mentioning some of the intensive outpatient programs in VA, including HBPC, MHICM, PIM. In addition to PC-MHI, the VA's PACT patient-centered medical home model provides an opportunity for case management of patients with higher levels of need, when implemented well.	We appreciate reviewer's suggestions and have provided additional examples of VA programs that may be relevant for future care coordination efforts.
Pg 14/line 10-11: Here or elsewhere could refer to Hybrid effectiveness-implementation studies (Curran, Med Care, 2012- I see it listed in the references)	We have added the names of specific implementation frameworks and categorization of studies that include implementation outcomes to the Discussion.
Pg 14/line 18-19: As above (Pg 12 comments), I don't understand why these very specific domains are highlighted as necessary tools. Measuring "health care team integration" seems of interest from a research perspective, but not high on the list for a practical care coordination tool. Some of the specific examples pg 24/line 49-52 seem of higher value.	As noted above, we have clarified in Methods the rationale for addressing these types of tools or assessments. They were selected as relevant to the initiative in evaluating current pilot efforts and future implementation results.
Pg 24/line 31-33: To drive the point home, would add percentages for 7/9 and 3/18.	We appreciate reviewer's suggestion and have made these additions.
Pg 24/lines 51-52: Is there any more work that could be done to identify tools/approaches? Given the number of papers reviewed, it seems hard to believe that none of the programs were able to share any effective tools. Even if the programs don't have outcomes data for hospitalizations, if the tools were found to be valuable to patients/staff that could still be important information. I know a lot of work has already gone into this review, but I am wondering if the investigators tried contacting the clinical leads of some of the interventions that they reviewed? I would think these	We agree that it is possible that tools or approaches used by interventions that did not assess hospitalizations or ED visits may still be valuable. However, that would have substantially expanded the scope of this review, and created additional challenges in interpreting the utility of these tools for the VA initiative. We invited lead authors of the identified relevant primary studies for interviews. We also sought referrals to other team members who may have greater knowledge about tools and approaches used to implement or evaluate these interventions. Our interviews suggested that formal assessments of these topics were often not conducted.

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individuals would be able to share the practical tools that they used for care coordination.	
Reviewer 7	
Are there any published or unpublished studies that we may have overlooked? Yes - I only selected yes to offer that for the qualitative interviews you might include the authors of this recently published protocol if it and they aren't included already: Miller, L.B., Sjoberg, H., Mayberry, A. et al. The advanced care coordination program: a protocol for improving transitions of care for dual-use veterans from community emergency departments back to the Veterans Health Administration (VA) primary care. BMC Health Serv Res 19, 734 (2019). https://doi.org/10.1186/s12913-019-4582-3 Full text link: https://rdcu.be/b4ao1	We appreciate this recommendation. We reviewed this study, and as it does not report results of the intervention, it would not meet the criteria for inclusion.
Thank you for the opportunity to review/contribute to this ESP. The draft is excellent. I have some thoughts/suggestions: 1. re: the approaches to patient selection (as mentioned on p.16, line 34; 24, lines 19-23 and especially p. 25, lines 20-28 and especially interviewee comments, p. 18 lines 20-24). There is an interesting topic for future research (as the interviewee describes). Future research could also include inquiry into care coordination to different populations (less and more complex). The interviewee snippet on p. 18, lines 19-21 is so apt as our Veterans often have multiple conditions and may still need hospital or increased care. 2. re: outcomes, medical hospitalization and ED visits were the primary outcomes, I could see Veterans benefiting from case management and care coordination in other ways (e.g. reduced stress and mental health symptoms). So perhaps expanding the focus in future research to other utilization or severity of other conditions. (Recognize this might be outside of the current ESP scope). 3. While not part of the initial scope, I wonder about the technology used in the different reviews/studies analyzed (i.e. telephone and video). While this review was conceived, developed and started before COVID-19, given there has been a tremendous shift to non-face to face visits and increased use of telehealth, it might be informative to add that into the	Thank you. Thank you. We agree that there are potentially other benefits of improved care coordination. We selected hospitalizations and ED visits to address priorities of our stakeholders. We agree that use of technology is a potentially important characteristic of care coordination interventions. Eligible systematic reviews provided mainly descriptive information about incorporation of technology (generally of telephone calls) and did not draw conclusions on whether technology impacted the effectiveness of interventions. We have added this information to the Results. In the relevant primary studies,

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study details and then tie that topic, as appropriate, into future research and/or policy (e.g. How has COVID-19 affect care coordination and case management integration and implementation.)	telephone was also the main technology used (as described in Table 3). It would be interesting for future studies to address use of video-conferencing in various care models.
Reviewer 8	
Under Implications for Policy, lines 16-19, it is stated that the goal of the CC&ICM is standardization, which is a valid statement, however, this is currently balanced with the need for adaptability at the specific facility due to staffing, existing structure and practices. CC&ICM model recommendations are implemented with this flexibility and are reported to CC&ICM leadership for dissemination to the field as potential practices to implement or adapt as needed. As indicated further under Key Findings, lines 44-49, interviewees did indicate a lack of adaptability at the facility level in some circumstances. This was likely due to a variety of factors (facility leadership, resources, flexibility of staff, etc) but is not a result of "model" inflexibility. This slight misunderstanding leads to another issue in the same section, lines 28 - 34. This suggestion is in agreement/alignment with the CC&ICM model. The CC&ICM model is not for patient navigation (solely), but incorporates a wholistic, patient centered, collaborative approach which includes the components described in the Mental Health collaborative model. It would seem the authors are contrasting these similar VA models in this recommendation. There are several notations regarding ongoing interviews to compare tools and approaches used across models with only 6 of 22 conducted to date. However, under Key Informant Interview results (page 17 & 18, lines 15-29) results are curiously concluded.	We appreciate reviewer clarification of CC&ICM goals. We have adjusted the Discussion to better describe these goals. We have also clarified that the PCMHI model is a co-located collaborative model between primary and specialty care (in this case, mental health). This is substantially different from care coordination services that are meant to be deployed to address a wide variety of potential risk factors and Veteran needs. We provided draft results and conclusions based on interviews that had been completed at that time. We have now updated the relevant sections in the Results and Discussion to include additional interviews completed after the draft report.
Reviewer 9	
Page 1 line 22 change VA Coordinated care to VA Care Coordination; Page 9 line 25 same as above	Updated to “VA Coordinated Care” as requested

APPENDIX 7. DETAILED CHARACTERISTICS AND RESULTS FROM MEDIUM- AND HIGH-QUALITY SYSTEMATIC REVIEWS

Author, Year (Quality, Year of Search); # Relevant Primary Studies	Included Populations; Study Designs	Included Relevant Interventions	Main Objective(s) Results Summary
Case Management and Transitional Care Interventions			
Di Mauro, 2019[18] (Medium, 2018); 3	"[frequent user] *adult patients who visit the ED"*; RCT, cohort	*"Case Management…is a collaborative approach used to assess, plan, facilitate and coordinate healthcare related matters…It aims at meeting patients' and their families' health needs through communication and available resources, thus, improving individual and healthcare system outcomes…"*	*"to examine if and how the* [case management] *programs are implemented to reduce the number of* [frequent user] *visits to the ED."* *"Ten papers showed…decrease in visits to the ED (from 14% to 58.5%) and in… 3 studies the results were insufficient to prove this utility."*
Hudon, 2019[19] (High, 2017); 4	"*adult frequent users…with physical chronic disease*"; RCT, cohort, cross-sectional	*"*[Case management is] *a collaborative approach to ensure, coordinate, and integrate care and services for patients, in which a case manager evaluates, plans, implements, coordinates, and prioritizes services on the basis of patients' needs in close collaboration with other health care providers…"*	*"to identify characteristics of* [case management] *that yield positive outcomes among adult frequent users with chronic disease in primary care."* *"analysis revealed that the case-finding characteristic (ie, high frequency of health care visits) and complexity of health care needs are necessary…* [P]*ositive outcomes were associated with the following 2 sufficient characteristics when each was combined with this necessary condition: high-intensity* [case management] *intervention and presence of a multidisciplinary/interorganizational care plan"*
Iovan, 2019[20] (Medium, 2017); 6	*"population studied…was classified as super-utilizer"*; RCT, cohort	Case management: • *"Holistic approach to care considering a patient's complex medical and social needs…* • *Connects patients with existing community resources* • *Creates a continuum of care that addresses medical, financial, psychosocial, and behavioral needs…* Care coordination:	*"systematic review of interventions aimed at reducing prehospital and emergency care use among super-utilizer populations in the United States."* *"17 of 21 case management studies investigated intervention impact on ED use. Of those, 13 showed a reduction in utilization, yet only 5 of these 17 studies (29%) had a control group. Among the 5 studies with a control group, 3 showed some degree of positive impact of the intervention on ED utilization, including 2 of the 3 RCTs…* [M]*ethodological and study design weaknesses—especially regression to the mean—were widespread and call into question reported positive findings."*

		"*Thoughtful review of a patient's medical needs, resulting in more effective transitions between providers…"*	
Van der Elst, 2018[27] (Medium, 2016); 0	*"60 years or older, diagnosed as frail, and community-dwelling"*; RCT	*"Case management – a collaborative process of assessment, planning, facilitation, care coordination, evaluation, and advocacy for options and services to meet an individual's and family's comprehensive health needs through communication and available resources to promote quality, cost-effective outcomes."*	*"What effect do interventions have on frail community-dwelling older adults in terms of mortality, hospitalization… and institutionalization?* [H]*ow do age, study duration, and the multi- versus unidimensional approaches of frailty and recruitment influence the effect of an intervention?"* *"pooled OR for hospitalization when allocated in the experimental group was 1.13 [95% CI: 0.95, 1.35] for case management...* *The influence of duration of intervention…multi- versus unidimensional approach to frailty, and recruitment* [method] *on the effect of an intervention was explored…*[in] *sub-analyses… but with no significant results."*
Joo, 2017[21] (Medium, 2016); 1	*"*[adult] *populations who were diagnosed with chronic illnesses"*; RCT	*"Case managers, who often work with multidisciplinary teams, are located within the space of transitional care, which means they are able to do continuous follow-up care, timely transitional care and patient-centred care as patients move from hospitals to their communities…"*	*"synthesizes recent evidence of the effectiveness of case management in reducing hospital use by individuals with chronic illnesses"* *"All* [10] *studies compared hospital readmission…in the intervention and control groups... Three of the studies reported statistically significant reductions in hospital readmissions… Three other studies…reported reduced readmissions but no statistically significant results… The remaining studies… reported no effect on readmission rates.* *Six studies reported the number of ED visits as an outcome.* *Five studies found a statistically significant reduction in the number of ED visits in pre- and post-*[case management] *intervention analysis...*[T]*he sixth study…found reductions…for the* [case management] *group over the control group,* [but] *the results were not significant."*
Baker, 2018[15] (Medium, 2015); 4	Adults in 1 of 3 categories: *"a) 2 or more chronic medical conditions, b) at least 1 chronic medical condition + depression, and c) high past or predicted utilization"*; RCT	*"patient-focused, comprehensive care management intervention (areas of focus included some combination of self-management, healthcare system navigation, self-efficacy, symptom monitoring, symptom management, etc.) targeting the "whole" patient (e.g. including nurse- or case-manager led interventions, integrated care team strategies, group interventions)"*	*"What are the necessary components and appropriate intensity of effective care management interventions?"* *"Seven studies measured hospital admissions and readmissions in the post-intervention period; however, only 2 of these studies showed an improvement in* [hospital readmission]… [C]*ommon methodologic issues limited our ability to draw conclusions regarding the effectiveness of specific intervention components…*[I]*nsufficient detail on implementation fidelity and participant adherence to the interventions limited any substantive observations on the relationships between intervention content and intensity and any patient benefits."*
Le Berre, 2017[22] (High, 2015); 3	*"Patients 65 years old or older with at least 1* [chronic disease] *who have been hospitalized and are being*	*"*[Transitional care] *interventions comprising all the following elements: (1) aimed at providing coordination and continuity of care; (2) pre-arranged structured post-discharge follow-up (e.g., home visits, phone calls); (3) at least 1*	*"to determine the effectiveness of interventions targeting transitions from hospital to the primary care setting for chronically ill older patients."* *"The risk of readmission in* [transitional care] *was lower than in* [usual care] *at 3 months post-discharge (RD: -0.08 [-0.14, -0.03]; NNT: 7), 6 months post-discharge (RD: -0.05 [-0.09, -0.00]; NNT: 20), at 12 months post-discharge (RD:*

	discharged back to home"; RCT	*follow-up starting within 30-days post-discharge."*	*-0.11 [-0.17, -0.05]; NNT: 9), and at 18 months post-discharge (RD: -0.11 [-0.21, -0.01]; NNT: 9). No significant change was observed at 1 month…* *The risk of an ED visit… was lower… at 3 months post-discharge (RD: -0.08 [-0.15, -0.01]; NNT: 13). No significant change was observed at 1, 6, and 12 months..."*
Soril, 2015[26] (High, 2015); 3	*"general adult frequent ED user"*; RCT, cohort	*"...case or care management is considered a comprehensive, interdisciplinary approach taken to assess, plan, personalize, and guide an individual's health services to promote improved patient and health system outcomes."*	*"to establish the effectiveness of interventions aimed at reducing the ED utilization, in comparison to usual care, for individuals who are frequent users of the ED"* *"Compared to the control groups, 1 RCT reported no change in the mean number of ED visits following* [case management]*, whereas the second RCT reported a minor decrease in median ED visits among those in the intervention group. Of the 10 comparative cohort studies…, 9 studies reported outcomes related to the change in ED visits: 8 studies observed a decrease in the mean (between -0.66 and -37 ED visits) [or median number of ED visits (between -2.28 and -20 ED visits) compared to the controls or before* [case management]*; and 1 study reported an increase of 2.79 median ED visits post-intervention…"*
Moe, 2017[23] (High, 2014); 3	*"adult frequent ED users"*; RCT, cohort	*"Case management involved multidisciplinary teams, including physicians, nurses, psychologists, social workers, and/or housing and community resource liaisons, who developed tailored care strategies for patients and linked them to necessary services."*	*"to summarize experimental studies evaluating the effectiveness of interventions targeting adult frequent ED users at reducing ED visit frequency and improving hospital admissions…"* *"Post- versus pre-intervention rate ratios were calculated for 25 studies and indicated a significant visit decrease in 21 (84%) of these studies. The median rate ratio was 0.63 (interquartile range = 0.41 to 0.71)."*
Smith, 2016[25] (High, 2011); 2	*"people… with multimorbidity"*; RCT, cohort	*"…organizational changes delivered through practitioners or directly to patients. For example, any changes to care delivery such as case management or the addition of different healthcare workers such as a pharmacist…"*	*"To determine the effectiveness of health service or patient oriented interventions designed to improve outcomes in patients with multimorbidity in primary care and community settings"* *"Five studies reported outcomes on health service utilization…*[One] *reported significant improvements for intervention group…relating to hospital admissions, whereas* [four studies] *found no significant difference in outcomes…* *The results indicate that it is difficult to improve outcomes in this population but that interventions focusing on particular risk factors or functional difficulties in patients with co-morbid conditions or multimorbidity may be more effective."*
Intensive Primary Care Interventions			
Totten, 2016[30] (High, 2015); 1	*"Adults with chronic illnesses or disabilities"*; RCT, cohort	Home-based Primary Care: *"1) Visits by a primary care provider…* *2) Visits to a patients home…* *3) Longitudinal management…* *4) Comprehensive primary care…"*	*"To assess the available evidence about home-based primary care (HBPC) interventions for adults with serious or disabling chronic conditions."* *"The strongest evidence (moderate) was that HBPC reduces hospitalizations and hospital days. Reductions in emergency and specialty visits and in costs were supported by less strong evidence, while no or unclear effects were identified on hospital readmissions and nursing home days...* *HBPC had a positive impact on patient and caregiver experience, including satisfaction, quality of life, and caregiver needs, but the strength of evidence for these outcomes was low…*

			There is wide variation in the services provided as part of HBPC interventions. In the evidence presently available there is not an apparent pattern or cluster of services associated with differences in outcomes. Most included assessment and coordination...Four studies examined the incremental impact of additional services to HBPC."
Edwards, 2017[29] (Medium, 2017); 7	*"Patients identified as high risk for hospital admission and/or death"*; RCT, cohort	*"We classified programs as primary care replacement (home based), primary care replacement (clinic-based), or primary care augmentation, and assessed the impact of outcomes separately for each category…"*	*"to classify interdisciplinary, multicomponent* [intensive primary care] *programs according to program characteristics, and to evaluate the effectiveness of these programs in reducing hospitalizations, emergency department…visits, and mortality among patients at high risk for hospitalization or death."* *"Most studies showed no impact of intensive primary care on mortality or emergency department use, and the effectiveness in reducing hospitalizations varied…The programs varied in the way they identified and screened patients for enrollment, though most focused on older adults with functional limitations… All programs utilized multidisciplinary staff to meet a range of patient needs, and most commonly included physicians, nurses, social workers, physical therapists, mental health providers, and pharmacists… Given the negative results of many of these studies, it is possible that attempts to manage complex care using large multidisciplinary teams may be ineffective for some high-needs patients, as the burden of coordination may outweigh the benefits of the specialized skills of each team member… We had hoped to identify key program features, such as patient selection criteria, that may have contributed to the success or failure of these programs. Unfortunately, reporting of key intervention characteristics was inconsistent… In addition, the data collected on intervention fidelity, implementation process, and contextual factors at individual intervention sites varied among studies."*

CI=confidence interval; ED=emergency department; NNT=number needed to treat; OR=odds ratio; RCT=randomized controlled trials; RD=risk difference